

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
25 January 2001 (25.01.2001)

PCT

(10) International Publication Number  
WO 01/06663 A2

(51) International Patent Classification<sup>7</sup>: H04B

(21) International Application Number: PCT/US00/18200

(22) International Filing Date: 30 June 2000 (30.06.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/141,587 30 June 1999 (30.06.1999) US

(71) Applicant and  
(72) Inventor: DAVIS, Christopher, C. [US/US]; 6400  
Grayson Terrace, Bowie, MD 20715 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

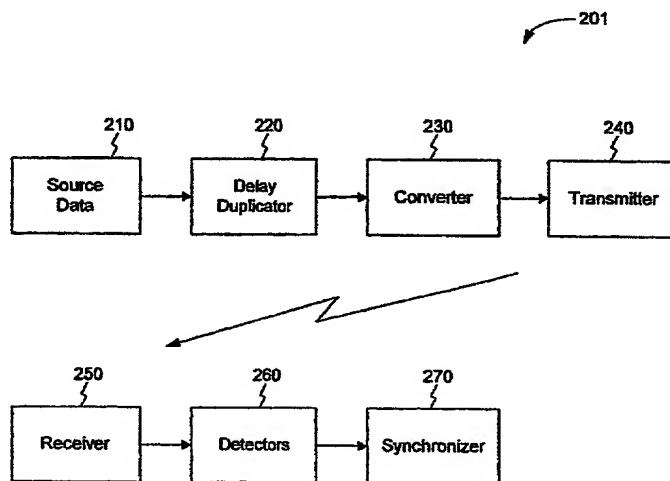
Published:

— Without international search report and to be republished upon receipt of that report.

(74) Agents: SOKOHL, Robert, E. et al.; Sterne, Kessler, Goldstein & Fox P.L.L.C., Suite 600, 1100 New York Avenue, N.W., Washington, DC 20005-3934 (US).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SYSTEM AND METHOD FOR OPTICAL WIRELESS COMMUNICATION



(57) Abstract: A system and method for optical wireless communication with fading resistance. A delayed diversity approach reduces fading significantly. Data is sent in a set of light signals (also called diverse light signals) which each have a different polarization and/or a different wavelength. The diverse light signals are also temporally different in that they are transmitted in a delayed fashion with respect to one another. In this way, each light signal is carried over a different, uncorrelated "channel" through the atmosphere. At a receiver, original data in each received light signals is temporally adjusted and combined into a single output data signal. The accuracy of each bit in the output data signal is then due to the reception of the combined diverse light signals. In this way, even if fading occurs in one channel (affecting one diverse light signal), a combined output data signal can still be generated at relatively high accuracy from the original data carried in one or more of the other diverse light signals.